JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

An Empirical Study of Merchant Discount Rates (MDR) and Consumer Credit Card Spending in India

MRUDULA .P, Assistant Professor & V.Radhika, Head Department of Management
St.Josephs degree and Pg. College
Andhra Mahila Sabha Arts and Science College

Abstract:

Merchant discount rates (MDR) have shaped card payments in India mainly through debit cards and UPI, and only indirectly through credit cards. Credit card MDR is uncapped and negotiated, yet credit card spending reached ₹23.62 trillion in FY26 (April 2025 to March 2026) while debit card volumes fell 67% between 2021 and 2025. The evidence reviewed here supports a substitution story, with zero or capped MDR pushing merchants and consumers toward UPI and debit, and credit cards filling the gap for higher-value, online and rewards-driven spending. It does not support a clean causal claim that MDR changes credit card spending, because no study isolates that effect for India. The paper is a descriptive synthesis, not an econometric estimate.

Key words: *Merchant Discount Rates, Credit cards, Consumers, Unified Payment Interface, Debit cards:*

1. Introduction

This paper examines the impact of the Merchant Discount Rate (MDR) on credit card expenditure in India. Functioning simultaneously as the processing fee borne by merchants and the primary revenue stream underwriting consumer rewards, MDR serves as a critical mechanism in payment economics. India provides a unique quasi-experimental environment due to historical regulatory asymmetries; while the Reserve Bank of India capped debit card MDR in 2012 and 2017, and subsequently mandated a zero-MDR policy for RuPay debit and the Unified Payments Interface (UPI) in January 2020, credit card MDR remains uncapped and market-determined (typically fluctuating between 1.5% and 2.5%). Consequently, any regulatory effect on credit card volume operates through cross-instrument substitution rather than direct price controls on credit transactions.

Through a comprehensive policy review and descriptive analysis, this study addresses three central inquiries:

How structural shifts in MDR frameworks have altered the relative cost configurations among competing payment channels.

The empirical trajectories observable in credit card, debit card, and UPI transaction volumes.The predictive insights generated by international literature regarding the impending 2026 regulatory adjustments, specifically the implementation of MDR on high-value UPI transactions and RuPay credit cards integrated with the UPI ecosystem.

Notably, this study utilizes a descriptive and institutional approach; it does not attempt to estimate a formalized causal effect.

2. Literature Review

Cross-country empirical literature demonstrates that price caps on payment card fees rarely stimulate transaction volume; instead, they primarily trigger wealth transfers among merchants, issuers, and cardholders. Four prominent findings recur throughout the empirical literature:

- **Inelasticity of Transaction Volume to Debit Fee Caps:** Direct regulatory constraints on debit fees do not reliably alter consumer payment behavior. An empirical evaluation of Brazil's October 2018 debit interchange caps found that while the overarching MDR fell incrementally and issuer debit revenues contracted proportionally, credit interchange revenues remained entirely unaffected. Crucially, the study found no statistically significant evidence that the regulatory cap altered debit card usage density (de Castro, Schmitz, and Azevedo, 2023).
- **Ambiguous Optimization in Cash Displacement:** While compressing interchange fees can reduce merchant cash reliance, the optimal fee threshold remains theoretically and empirically unsettled. Using Italian issuer-level panel data, Ardizzi demonstrates that cash utilization at the point of sale is positively correlated with high interchange levels, indicating that targeted fee regulation can serve as a catalyst for digitization. However, the study finds no structural evidence establishing a zero or near-zero fee framework as socially or economically optimal. Similarly, a cross-country panel analysis evaluating the European Union’s 2015 interchange fee caps concludes that the net effect of fee reductions on per capita card transactions is inherently ambiguous due to the complex behavioral reactions of both issuers and merchants (Ardizzi et al.).

Issuer Revenue Recoupment and Cross-Subsidization Dynamics: Financial institutions systematically offset regulatory fee compressions by restructuring alternative consumer pricing mechanisms. Following Australia's 2003 payment reforms—which reduced average credit interchange margins by approximately 40% from a baseline of 0.95%—issuers increased annual credit card maintenance fees, diluted cardholder loyalty rewards, and secured merchant surcharging provisions.

A comprehensive review published by George Mason University suggests that merchants passed through a significantly smaller fraction of their operational savings to consumers than banks passed onward through heightened account maintenance costs. Furthermore, capping credit fees more aggressively than debit fees artificially accelerated a consumer shift from credit networks toward debit alternatives (Morris et al.).

This finding parallels an analysis of the United States debit cap, which demonstrates that subsequent expansions in credit card usage effectively neutralized 67% of total merchant debit savings. While these specific studies originate from institutions critical of fee caps, an independent European Union evaluation commissioned by Mastercard similarly observed increased cardholder costs alongside inconclusive evidence regarding consumer price pass-through.

- **Multi-Dimensional Constraints on Merchant Adoption:** Merchant acceptance behavior is governed by institutional and structural frictions extending far beyond basic transactional pricing. A localized empirical survey of micro-merchants in Jaipur revealed that approximately 60% of small-scale enterprises completely abstained from digital payment networks, concluding that isolated reductions in transaction adoption costs are insufficient to drive systemic digital integration (PLOS ONE, 2019).

3. Research Gap:

Supply-Side Rigidities in the Indian Context

Domestic industry discourse reinforces these international findings by highlighting severe supply-side distortion risks. The Payments Council of India formally cautioned that an absolute zero-MDR mandate disincentives merchant acquirers, potentially leading to the systemic withdrawal of Point-of-Sale (PoS) terminal infrastructure from low-tier retail geographies.

Furthermore, current industry commentary notes a distinct operational bias among domestic banking institutions, which systematically prioritize the issuance of global network debit cards (Visa and Mastercard) that generate interchange revenue over domestic RuPay alternatives bound by zero-MDR mandates. To date, there is a total absence of peer-reviewed empirical literature evaluating how Indian MDR regimes explicitly influence credit card expenditure—a critical gap in the literature that the research design of this study intends to resolve.

4. Conceptual framework and hypotheses

MDR can touch credit card spending through four channels. Each one is a mechanism suggested by the literature above, not something this paper measures.

1. **Substitution.** When UPI and RuPay debit carry zero MDR and Visa or Mastercard debit carries a capped fee, merchants prefer UPI. Consumers follow, so debit use falls. Credit is affected only to the extent that the same shoppers also move credit purchases to UPI.
2. **Rewards funding.** Interchange on credit cards funds part of cardholder rewards. A higher credit MDR supports richer rewards and so more card spending, while a lower one pushes issuers to cut rewards or raise fees, as in Australia.
3. **Acceptance.** Merchants decide whether to take credit cards at all. Only about 2 to 4 million merchants accept credit cards, against over 50 million that accept UPI, per 2022 figures (Business Standard). Credit on UPI therefore widens acceptance, and MDR on those payments decides whether small merchants opt in.
4. **Relative price at higher ticket sizes.** A fee on UPI payments above ₹2,000 narrows the cost gap with credit for exactly the transactions where credit cards compete.

These give four testable hypotheses.

- **H1.** Zero or capped MDR on debit and UPI reduced debit card use through substitution.
- **H2.** Credit card spending kept growing despite UPI's zero MDR, because credit serves purposes UPI does not match: a credit period, rewards, EMI and online checkout.
- **H3.** Waiving MDR on small RuPay credit payments on UPI expands credit acceptance among small merchants, while MDR above ₹2,000 limits it among larger ones.
- **H4.** A UPI fee above ₹2,000 shifts some high-value payments toward credit cards, with the direction depending on whether merchants steer shoppers and on how rewards change.

Empirical Evaluation of Hypotheses

- **Hypothesis 1: Instrument Substitution**

The empirical evidence strongly aligns with the substitution hypothesis (**H1**). Over the observed period, total debit card transaction volumes collapsed by roughly two-thirds, while the average ticket size per debit transaction expanded by approximately 86%. This dual pattern strongly suggests that low-value retail transactions migrated

from debit networks to the Unified Payments Interface (UPI), leaving debit card infrastructure to primarily service higher-value transactions.

The Reserve Bank of India (RBI) explicitly attributes this structural decline in debit usage to competition from UPI, prepaid wallets, and credit networks. While the temporal alignment of this shift strongly correlates with the enactment of the January 2020 zero-MDR mandate, isolating the precise causal impact of MDR remains impossible because multiple competing digital payment modes were introduced concurrently.

- **Hypothesis 2: Credit Card Autonomy**

The hypothesis that credit card spending operates on an independent, insular trajectory (**H2**) receives only partial empirical validation. In absolute terms, credit card spending expanded robustly, with e-commerce and online channels commanding approximately 62% of total credit expenditure.

However, aggregate monthly spending expanded at an annualized rate of only 7% to 8%, underperforming the roughly 10% annual growth rate in total cards outstanding. Because UPI merchant payments expanded at a vastly accelerated velocity over the same horizon, credit card platforms are clearly not insulated from the zero-MDR infrastructure; their relative market share in total digital payments is declining.

- **Hypothesis 3: Credit-over-UPI Integration**

Early transaction metrics provide preliminary validation for the credit-on-UPI integration hypothesis (**H3**). During the first seven months of FY25, RuPay credit card volumes routed through the UPI network reached 750 million transactions, aggregating to ₹63,826 crore—nearly doubling the annualized velocity of FY24.

Crucially, the average ticket size for these transactions hovered around ₹850. This concentration below the ₹2,000 regulatory threshold—where MDR is legally waived for small merchants—is consistent with the hypothesis that fee exemptions influence transaction patterns. Nonetheless, this represents an isolated, descriptive data point rather than a formalized empirical test.

- **Hypothesis 4: Post-Exemption UPI Pricing Impact**

The impact of introducing an MDR framework for UPI transactions exceeding ₹2,000 (**H4**) cannot be empirically evaluated at this time. The reported implementation framework commenced on October 15, 2026, roughly two weeks prior to the composition of this study, and post-implementation transaction data are not yet available within the reviewed sources.

5. Data and Methodology

This analysis relies on aggregate data from the Reserve Bank of India's (RBI) monthly payment statistics and its H2 2025 Payment Systems Report, sourced via media coverage and brokerage research. Because the primary RBI datasets were not directly downloaded, the figures reflect the secondary sources cited, which exhibit minor discrepancies (for example, March 2026 credit card spending is reported as ₹2.19 trillion in one source and ₹2.18 trillion in another). Utilizing a descriptive methodology, this study compares trends across credit cards, debit cards, and UPI over the specified reporting periods, calculates growth rates from the reported figures, and provides a rough estimate of the Merchant Discount Rate (MDR) total on credit card transactions. These trends are then analyzed alongside the theoretical mechanisms and international empirical findings discussed previously. Notably, this research design does not establish causal effects, as credit card, debit card, and UPI usage evolved concurrently with confounding factors such as smartphone adoption, rising incomes, e-commerce expansion, changing bank lending standards, and the pandemic. Furthermore, the aggregate data lacks a control group. The requirements for a rigorous causal research design are outlined in Section 8.

6. Findings

Credit card spending kept rising while debit cards collapsed and UPI took over small payments, which fits a substitution story and gives no sign that credit MDR has held spending back. Credit is, however, losing share to UPI.

Measure	Earlier	Latest	Change
Credit card spending, 12 months	₹23.18 trn (Jan–Dec 2025)	₹23.62 trn (FY26)	+13.96% for calendar 2025 (Angel One, Angel One)
Credit card spending, one month	₹1.93 trn (Jul 2025)	₹2.08 trn (Jul 2026)	about +7% to +8% (Outlook Money)
Credit cards outstanding	111.62 million (Jul 2025)	122.86 million (Jul 2026)	+10.1% (computed)
Credit card transactions	2.16 bn (2021)	5.7 bn (2025)	2.6 times (Statesman, 5paisa)
Debit card transactions	4.087 bn (2021)	1.336 bn (2025)	−67%
Debit card value	₹7.4 lakh crore (2021)	₹4.5 lakh crore (2025)	−39% (computed)
Average debit card payment	about ₹1,810 (2021)	about ₹3,370 (2025)	+86% (computed)
UPI share of payment volumes	n/a	85.5% (H2 2025)	RBI report via Business Today
UPI merchant payments vs credit card spending, May 2026 yoy		UPI +25.2%, credit +6.6%	credit share of merchant digital payments 17.9%, down 235 bps (Tribune, Equirus report)

7. Financial Scale of Credit Card MDR:

To contextualize the aggregate economic weight of credit card processing costs, a baseline counterfactual simulation can be constructed. Applying an estimated industry-standard MDR range of 1.5% to 2.0% against the **FY26 aggregate credit card expenditure of ₹23.62 trillion yields an estimated annual gross merchant fee liability between ₹0.35 trillion and ₹0.47 trillion (approximately ₹35,000 to ₹47,000 crore)**.

This calculation serves strictly as an upper-bound approximation and carries three specific analytical caveats:

- **Rate Heterogeneity:** Actual processing fees vary significantly across diverse merchant categories, transaction risks, and card tiers.
- **Exempt Spending:** A portion of aggregate spending carries specialized, lower concessionary rates or complete fee waivers.

- **Data Constraints:** The baseline fee parameters are derived from practitioner consensus and secondary industry tracking rather than official regulatory reporting.

8. Discussion and Policy Implications

The primary policy mechanism influencing credit card expenditure in India is the relative cost structure of alternative payment instruments, rather than direct variations in credit card MDR itself. Three structural implications emerge from the preceding analysis:

- **Convergence of Digital Payment Cost Configurations:** The historically wide cost gap between credit card platforms (uncapped market pricing) and UPI infrastructure (zero-MDR) is narrowing. The introduction of an MDR framework on P2M UPI transactions exceeding ₹2,000 directly compresses this price differential in the competitive mid-to-high ticket segment. Whether this structural shift increases credit card volume depends heavily on how large-scale merchants manage transaction routing and consumer steering. While institutional guidelines dictate that merchants must internalize these costs rather than levy explicit consumer surcharges, international evidence from the European Union and Australia demonstrates that merchant behavioral responses—including the potential internalization of fees via adjusted base listed prices—remain highly variable and empirically difficult to forecast.

Fiscal Imbalances of Zero-MDR Infrastructure as a Reform Catalyst: The transition toward partial monetization is driven by the structural fiscal deficits inherent to the zero-MDR regime. The Union Budget allocated ₹2,000 crore for digital payment incentives, a flat year-on-year allocation that stands in sharp contrast to an expanding transaction velocity estimated at roughly 30 crore free transactions daily. With early industry assessments indicating a net sector deficit of approximately ₹5,500 crore across UPI and RuPay debit architectures, the legislative amendments enacted in August 2026 serve as a direct response to infrastructural strain. For credit card networks, the introduction of a UPI fee effectively reduces the public subsidy that previously insulated UPI from commercial pricing realities.

- **Neutrality of Credit Card MDR Caps on Transaction Velocity:** Global empirical literature suggests that imposing direct caps on credit card MDR or interchange fees is unlikely to stimulate aggregate transaction volumes. Evidence from the United States and Australia demonstrates that issuers typically counter compressed interchange margins by raising consumer maintenance fees and diluting cardholder rewards programs. Furthermore, because Indian credit card reward mechanisms are heavily subsidized by interest income derived from revolving balances, capping the transactional merchant fee would alter cross-subsidization structures rather than expand real consumer expenditure. This indicates that future regulatory assessments should evaluate holistic card business models rather than isolating transaction processing fees.

The analytical foundations outlined in the regulatory agenda emphasize that any overarching review must balancing transaction cost rationalization with systemic financial inclusion. A centralized publication of granular MDR and interchange matrices stratified by instrument and merchant scale remains a necessary prerequisite for formalized empirical research.

8. Analytical Limitations and Econometric Research Design

The findings of this descriptive synthesis are constrained by severe institutional data limitations and concurrent macroeconomic developments:

- **Secondary and Aggregated Reporting:** Transaction metrics are derived from secondary financial press aggregations of institutional data, introducing minor reporting discrepancies and limiting direct verification against primary, un-aggregated central bank data tables.
- **Unobserved Pricing Variables:** Due to the decentralized, negotiated nature of credit card processing fees, a formalized, continuous time-series for actual credit card MDR does not exist. The baseline parameters rely on practitioner consensus rather than statutory regulatory disclosures.
- **Endogeneity and Identification Challenges:** Over the observed time horizon, the rapid expansion of digital commerce, rising per capita incomes, shifting risk appetites for unsecured retail lending, and pandemic-induced structural shifts occurred simultaneously. Consequently, simple trend analysis cannot isolate the independent impact of MDR adjustments from these macroeconomic confounders.
- **Conflicting Institutional Timelines:** The precise operational protocols governing late-2026 UPI pricing schedules and RuPay credit-on-UPI implementation dates remain fluid across secondary source summaries and commercial bank circulars, requiring further statutory confirmation.

9. Suggestions and Conclusion:

Based on the shifting price configurations, fiscal structural deficits, and behavioral incentives outlined in the analysis, the following interventions are suggested for regulators, financial institutions, and payment networks:

- **Adopt a Holistic Regulatory Approach to Credit Architecture:** The Reserve Bank of India (RBI) should resist isolating and capping credit card MDR or interchange fees. Because Indian card rewards and operational costs are heavily cross-subsidized by interest income from revolving balances, capping transaction fees will likely backfire—leading issuers to raise cardholder maintenance fees, dilute rewards, and inadvertently suppress consumer spending velocity.
- **Mandate a Centralised, Stratified Payment Matrix:** The central bank should establish a public, granular repository of MDR and interchange structures, stratified explicitly by payment instrument, transaction ticket size, and merchant scale. Formalized data transparency is a necessary prerequisite to eliminate empirical information gaps and enable rigorous research into merchant routing behaviors.
- **Optimize Merchant Steering Compliance Frameworks:** With the introduction of the H2 2026 MDR framework on P2M UPI transactions above ₹2,000, regulators must closely monitor merchant behavioral responses. Robust compliance mechanisms are required to ensure merchants internalize these costs as intended, preventing disguised consumer surcharges or base price inflation that could distort the mid-to-high ticket segment.
- **Calibrate Fiscal Subsidies to Match Transaction Velocity:** The government should re-evaluate the flat-rate budgeting of digital payment incentives (such as the fixed ₹2,000 crore allocations). To prevent systemic sector deficits and infrastructure strain, fiscal support must be dynamically linked to the expanding daily transaction volume, ensuring the commercial viability of the underlying payment rails.

Conclusion

This study demonstrates that credit card expenditure in India is fundamentally governed by the relative cost structures across competing payment rails, rather than isolated shifts in credit card MDR. The legislative amendments of August 2026—which introduced an MDR framework for high-value P2M UPI transactions—mark a structural convergence in India's digital payment ecosystem. By tapering the zero-MDR public subsidy that historically insulated UPI, this policy shift has compressed the price differential between credit card networks and UPI in the critical mid-to-high ticket market segment.

Ultimately, global empirical evidence shows that capping merchant fees alters internal banking cross-subsidization models rather than driving real consumer expansion. India's digital transition has reached a maturity level where zero-MDR infrastructure faces clear fiscal constraints, making partial monetization an operational necessity. As the cost boundaries between credit and UPI blur, the future trajectory of Indian retail payments will rely less on direct regulatory fee caps, and more on how dynamically merchants manage transaction routing and how holistically issuers adapt their business models to sustain credit expansion.

Sources

Figures are taken from the pages below as returned in search results on 28 October 2026. I did not open the underlying RBI and NPCI tables, and some pages are industry blogs or secondary summaries, flagged in the text.

- RBI, Merchant Discount Rates structure for debit card transactions, 2012
- RBI, Draft circular on rationalisation of MDR for debit cards, 2017
- Business Standard, MDR on UPI payments: what customers and merchants need to know from Oct 15
- Business Standard, RuPay credit card UPI transactions double in first seven months of FY25
- The Statesman, UPI dominates India's digital payments; debit card usage declines sharply: RBI report
- Outlook Money, Credit card spends hit Rs 2.08 trillion in July
- Tribune India, Credit card spending rises 2.6% in May (Equirus report)
- Angel One, Credit card spending hits Rs 17.65 trillion in April-December FY26 and March 2026 spending
- Outlook Business, Govt may bring back fee on UPI payments for large merchants
- YourStory, Government allocates Rs 2,000 Cr for UPI, RuPay incentives
- Canara Bank, merchant notices on RuPay credit card MDR on UPI and its later notice
- de Castro, Schmitz and Azevedo, Debit card interchange fee regulation: evidence from Brazil, Latin American Journal of Central Banking, 2023
- Ardizzi, Card versus cash, Journal of Financial Market Infrastructures
- Interchange Fee Regulation and card payments: a cross-country analysis, Bank of Finland conference paper
- Morris et al., The effects of price controls on payment-card interchange fees
- What explains low adoption of digital payment technologies? Evidence from small-scale merchants in Jaipur, India, PLOS ONE, 2019

Inc42, RBI's Payments Vision 2025 brings back focus on MDR charges